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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,935	03/05/2002	Toshimitsu Kaneko	220374US2SRD	5274

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EXAMINER

SHAH, UTPAL D

ART UNIT PAPER NUMBER

2625

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/087,935	Applicant(s) KANEKO ET AL.	
	Examiner Utpal D. Shah	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-13 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 2,8,14 and 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment received on 11/01/2005 has been entered in full.

Response to Arguments

1. Applicant's arguments filed 11/1/2005 have been fully considered but they are not persuasive.
2. Applicant argues that **Driscoll does not teach the method template matching**. The examiner respectfully disagrees with the above statement. Driscoll in col. 16, lines 38-42 discloses that in order to verify the identity of a user, the present invention obtains an image of the user and verifies it using the template retrieved from the database. Driscoll further discloses calculating correlation value between the verify image and the template. The examiner interprets this method to be a method of template matching because it is well known in the art that the method of template matching is a method in which a reference image or section of an image is matched with a second image in order to obtain a location of highest correlation between the two images. Thus the examiner would like to assert that Driscoll does teach method of template matching.
3. Applicant further argues that **Driscoll does not calculate, based on the first image, a difference between a corresponding point in the second image corresponding to the reference point and a calculated point in the second image which is obtained by the template matching**. The examiner respectfully disagrees.

Driscoll in col. 16, line 61 to col. 17, line 14 does teach calculating difference between reference point and calculated point. Driscoll teaches finding locations of the reference sections of the template (first image) in the verify image (second image). Driscoll first defines an expected position for the reference sections on the verify image (see fig. 15, block 114 and 116. The examiner interprets this expected position to mean the corresponding reference point.). Driscoll further discloses calculating a best match location between the reference section and verify image within the verify region (The examiner interprets this as the calculated point in the second image.). This the location at which the correlation value is highest between the two images. Finally, Driscoll discloses finding displacement (difference) between the expected position (reference point) and best match location (calculated point).

4. Applicant also argues that Driscoll **does not determine the reference point included in the template in the first image**. The examiner respectfully disagrees. Driscoll in col. 16, lines 61-65, defines an expected position for the reference sections on the verify image (see fig. 15. The examiner interprets this expected position to mean the corresponding reference point.).

5. Applicant's arguments see page 14, lines 19-23, filed 11/1/2005, with respect to claims 2,8 and 14 have been fully considered and are persuasive. The 103 rejections of claims 2,8 and 14 have been withdrawn.

Response to Amendment

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,3-6,7,9-12,13 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Driscoll, Jr. et al. (Driscoll) US patent number 5,067162.

8. In regards to claim 1, Driscoll discloses a parameter determination method of a template matching searching from a second image a matching area having the highest correlation with a template including a reference point in a first image, (figure 15 and col. 6, lines 42-49, Driscoll discloses searching for the best match location (point having the highest correlation) using correlation calculations between the template and the fingerprint image.) the method comprising:

calculating, based on the first image, a difference between a corresponding point in the second image corresponding to the reference point and a calculated point in the second image which is obtained by the template matching; and (col. 16, lines 61-65, Driscoll discloses an expected position (corresponding reference point) for the reference or template in the image. Col. 17, lines 1-14, Driscoll discloses finding the best match position (estimated point of the reference point) for the same template using the

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template matching method. Driscoll further teaches calculating the displacement (difference) between the expected point (corresponding point) and the best match point (estimated point).

determining, based on the difference, at least one of parameters of the template matching, the parameters comprising a location of the reference point, a size of the template and resolutions of the first and second images. (col. 17, lines 1-14, Driscoll discloses determining one of the template matching parameters the best match location (reference point).)

9. In regards to claim 3, Driscoll discloses that calculating comprises:

calculating non-similarity or similarity between a first area including the corresponding point of the second image and a second area to which the first area is moved within a predetermined searching area within the second image, and (col. 17, lines 1-14, Driscoll discloses calculating highest correlation value (correlation calculates similarity between two objects) between reference section which includes the corresponding point and the verifying image, but within verify region surrounding the corresponding point.)

finding the difference using a plurality of non-similarity or similarity calculated with respect to a plurality of the second areas within the searching area. (col. 17, lines 3-14, Driscoll discloses calculating highest correlation value (correlation calculates similarity between two objects) within the verify region, between reference image and verifying image. Note that examiner interprets this as calculating similarity between reference

image and verifying image at plurality of areas, as the reference image is moved around within the verifying region to determine best match location. Driscoll further teaches determining displacement (difference) between expected position and best match location.)

10. In regards to claim 4, Driscoll discloses a method wherein the determining comprising determining the reference point based on a reference candidate whose difference is minimum from a plurality of reference point candidates. (col. 17, lines 60-65, Driscoll discloses the reference section, which includes the reference point, is classified as a hit if it has a high correlation value and low displacement (meaning where the difference is minimum).)

11. In regards to claim 5, Driscoll discloses a method wherein the determining comprises finding a maximum size of the template giving a smaller difference than a threshold value. (col. 18, lines 38-40, Driscoll discloses that if the best correlation value is not high enough (The examiner interprets 'high enough' as a threshold, even though Driscoll does not expressly disclose a specific number. 'High enough' indirectly indicates that there is a threshold.) then the size is increased until the best match location is found.)

12. In regards to claim 6, Driscoll discloses a method wherein the determining comprise finding a minimum resolutions of first and second image giving a smaller

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difference than a threshold value. (col. 18, lines 38-40, Driscoll discloses that if the best correlation value is not high enough (The examiner interprets 'high enough' as a threshold, even though Driscoll does not expressly disclose a specific number. 'High enough' indirectly indicates that there is a threshold.) then the size is increased until the best match location is found. Examiner notes that resolution of an image depends on its size, so indirectly, Driscoll discloses determining resolution of the first and second image.)

13. Claims 7 and 9-12 recite limitations that are similar and in the same scope of invention as to those in claim 1 and 3-6 above in paragraph 3-7 and combinations thereof; therefore, claims 7 and 9-12 are rejected for the same rejection as described in claims 1 and 3-6.

14. Claims 13 and 15-18 recite limitations that are similar and in the same scope of invention as to those in claim 1 and 3-6 above in paragraph 3-7 and combinations thereof; therefore, claims 13 and 15-18 are rejected for the same rejection as described in claims 1 and 3-6.

Allowable Subject Matter

15. Claims 2,8,14 and 19-21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. In regards to claims 2,8 and 14, the closest prior art Driscoll teaches all the claimed limitations of claim 1, but Driscoll fails to teach where the difference is an upper bound of average distance between the corresponding point and the calculated point. Therefore, if claims 2,8 and 14 are rewritten in independent form they would allowable.

17. Claims 19-21 are allowable because they are dependent on claim 2,8 and 14 respectively.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Utpal D. Shah whose telephone number is 571-272-8568. The examiner can normally be reached on M-F (9 AM - 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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